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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,704	09/28/2001	Tetsujiro Kondo	450100-03501	6412

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FROMMER LAWRENCE & HAUG
745 FIFTH AVENUE- 10TH FL.
NEW YORK, NY 10151

EXAMINER	
SALTARELLI, DOMINIC D	
ART UNIT	PAPER NUMBER
2421	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/966,704	KONDO ET AL.	
	Examiner	Art Unit	
	DOMINIC D. SALTARELLI	2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 19-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 20, 2008 have been fully considered but they are not persuasive.

First, applicant argues that Hennes does not disclose means for detecting individual load conditions of the members of the audience (applicant's remarks, page 16). In response, it must be noted that the examiner explicitly states that Hennes does not disclose such a feature, and relies upon Deering for a prior art teaching.

Second, applicant argues that Hennes does not teach supplying auxiliary information indicative of the scene of video content, asserting that "…in Hennes, the particular scene that may be displayed is of no consequence." (applicant's remarks, page 16).

In response, the examiner has explained before that the claimed auxiliary information is necessary to the Hennes system to function as it has been disclosed. Hennes states "The show control system 500 may alter the display of the program in accordance with the data derived from these sensors 510, to thereby enable the audience to influence the display of subsequent images." (col. 6, lines 41-45). Hennes also states "Another object of the present invention is to provide an interactive virtual reality theater assembly having an optical projection system and a control system that detects audience motions and /or sounds and

projects images in response to such detection to dynamically alter the simulated environment." (col. 1, lines 60-65) From this disclosure it is clear that Hennes is teaching a system which provides a seamless, continuous display of content that is responsive to the audience, making knowledge of a currently presented scene a necessary part of calculating what the appropriate next scene to show based on feedback from an audience in response to *the currently presented scene.* Hennes does not abruptly, and seemingly randomly, splice content together solely based on audience measurements, but is disclosed as *altering* a presentation in a manner that is responsive to audience reactions in an ongoing and continuous fashion.

Third, applicant argues that Kimpara neither detects nor uses motion vectors, as currently claimed by applicant (applicant's remarks, pages 17-19).

In response, the Kimpara disclosure uses motion vectors not simply to detect movement but types of movement in order to accurately adjust a presentation. Kimpara, col. 4, lines 61-68 reads:

> Meanwhile, it is possible to execute the cycle detection based on movement of a line connecting between the balancing point and the reference point set within or outside the moving image. For example, by setting the reference point within the moving point but apart from the balancing point, it is possible to detect the direction of moving image and then detect the cycle based on the direction variation of moving image.

This line between the reference point and balance point is a clearly a motion vector which is being used to determine the directional changes of audience members (Kimpara, col. 7, lines 43-51).

Fourth, applicant argues that the load determining means for detecting load conditions disclosed by Deering are not used for the same purposes as claimed (applicant's remarks, page 20).

In response, the claims simply call for the load detection means to determine the states of audience members. While the particular state of audience members being detected by Deering is in regards to the objects on screen that audience members are focusing on, the modification of Hennes and Kimpara in view of Deering broadens the class of detected states of audience members considerably beyond simply their point of foveation (with Kimpara particularly disclosing considering audience movements such as stepping or shaking in col. 7, lines 43-51).

Lastly, applicant argues that there is no motivation for modifying Hennes in view of Imagawa (applicant's remarks, page 21).

In response, as similarly stated above, the combination of Hennes and Kimpara is concerned with more detailed states of the audience rather than merely their position, as Kimpara particularly discloses considering audience movements such as stepping or shaking in col. 7, lines 43-51.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4, 7-10, 12, 17, and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes (6,665,985, of record) in view of Kimpara et al. (5,310,962) [Kimpara] and Deering et al. (6,956,576) [Deering].

Regarding claims 1, 7, 8, 9, and 21-25, Hennes discloses an audience response determination apparatus for determining an audience response to displayed content (col. 6, lines 27-67), comprising:

overall state detection means for detecting the overall state of an audience (general audience detection means, col. 6, lines 45-49);

sound input means for inputting audio signals representing sounds generated by said member of such audience (col. 6, lines 45-49);

audio determining means responsive to said audio signals to determine a sound state of said audience (col. 6, lines 50-54);

individual state detection means for detecting the individual states of the members of the audience (individual detection means, col. 6, lines 36-41);

auxiliary information means for supplying auxiliary information indicating whether content currently is displayed, and if so, whether said content is video or

audio content and , if video content, said auxiliary information is indicative of a scene in said video content (in order to present a continuous series of images to viewers, the currently displayed content must be provided to and considered by the processor of the system, because the determination to be made is not for any of the available images, as argued by applicant, but for a specific subset of subsequent images which would logically proceed after the currently displayed content, col. 6, lines 41-45);

determination means for determining the audience response on the basis of the detected state of said audience and said supplied auxiliary information (col. 6, lines 49-52),

wherein said determination means for determining the audience response comprises an audience state determination unit for estimating whether the determined audience response is one of a predetermined number of types of responses (the pre-determined parameters to control the program being played is finite in nature, limiting the system to a predetermined number of types of responses that the system is capable of reacting to, col. 6, lines 49-64); and

control means for controlling the operation of said playback means based on the type of audience response determined by said determination means (col. 7, lines 1-13).

Hennes fails to disclose image input means for inputting image signals representing an image of members of said audience and motion vector determining means for receiving said image signal and determining motion

vectors in said image, wherein the individual state detection means also detects individual load conditions of the members of the audience, wherein the determination means estimates if a majority of said audience is intently watching or listening to said content, for estimating if a majority of said audience is clapping or singing along with the content, for estimating if a majority of said audience is clapping or shouting, for estimating if a majority of said audience is applauding or cheering, and for estimating if a majority of said audience is standing.

In an analogous art, Kimpara discloses an audience response measurement system wherein an overall state detection means uses an imaging apparatus to detect motion vectors as a function of individual members of an audience (col. 3 line 31 - col. 4 line 19 and col. 4, lines 61-68), estimating the overall state of the audience (including clapping [applauding], col. 7, lines 43-51), assisting in providing audience feedback information which allows a performance or display to be more precisely adjusted to audience reactions.

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus disclosed by Hennes to include image input means for inputting image signals representing an image of members of said audience and motion vector determining means for receiving said image signal and determining motion vectors in said image, as taught by Kimpara, for the benefit of assisting in providing audience feedback information which allows a performance or display to be more precisely adjusted to audience reactions.

Additionally, estimating if a majority of said audience are watching intently and estimating if a majority of said audience is standing are among the finite number of predictable solutions for measuring and responding to audience reactions in the proposed combination of Hennes and Kimpara. The combination measures audience response to content using motion sensors, imaging devices, and microphones, and as such, there are only so many possible solutions available to one of ordinary skill in the art to use the input from said devices for estimating audience responses such that a computer can be programmed to react to said input (Hennes, col. 6, lines 49-64). Further, there would be no technological hurdles which would result in an unreasonable expectation of success, as the designer is simply programming a computer to react to existing inputs from the sensor devices.

Hennes and Kimpara fail to disclose information indicative of a respective one of plural response states of said individual members and load information indicative of a respective response load condition of said individual members, wherein the individual state detection means also detects individual load conditions of the members of the audience.

In an analogous art, Deering discloses a content presentation system that reacts to monitored audience states, wherein a body position-sensing chair and pressure sensors are utilized to assist the system in determining the state of the audience (col. 6, lines 7-47).

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus disclosed by Hennes and Kimpara to include detecting individual load conditions of the members of the audience, providing additional sources of input which allow for more accurate sensing of the state of the audience.

Regarding claims 2 and 10, Hennes, Kimpara, and Deering disclose the apparatus and system of claims 1 and 7, wherein said overall state detection means takes an image of the entire audience and detects the overall bodily state of the audience based on the image taken (Deering discloses monitoring an audience using video cameras, col. 6, lines 36-37).

Regarding claims 3 and 12 Hennes, Kimpara, and Deering disclose the apparatus and system of claims 1 and 7, wherein said overall state detection means collects sounds uttered by the entire audience and detects the overall state of the audience based on the sounds collected (col. 6, lines 45-49).

Regarding claims 4 and 17, Hennes, Kimpara, and Deering disclose the apparatus and system of claims 1 and 7, wherein the load condition detected by said individual state detection means is a load applied to each of the audience's seats (Deering's 'body position sensing chair', col. 6, lines 36-43).

4. Claims 5, 6, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes, Kimpara, and Deering as applied to claims 1 and 7 above, and further in view of Imagawa et al. (6,353,764, of record) [Imagawa].

Regarding claims 5, 6, 19, and 20, Hennes, Kimpara, and Deering disclose the apparatus and system of claims 1 and 7, but fail to disclose the load condition detected by individual state detection means is the stepping force of each member of said audience, including a first means for the left foot and a second means for the right foot.

In an analogous art, Imagawa discloses a system for controlling devices by monitoring the state of the audience that includes floor sensors which monitor the weight and walking patterns of members of the audience (col. 3, lines 32-40).

It would have been obvious at the time to a person of ordinary skill in the art to modify the apparatus and system disclosed by Hennes, Kimpara, and Deering to include sensor means for the feet of audience members (floor sensors), as taught by Imagawa, providing additional sources of input which allow for more accurate sensing of the state of the audience.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes, Kimpara, and Deering as applied to claim 10 above, and further in view of Lu et al. (5,771,307, of record) [Lu].

Regarding claim 11, Hennes, Kimpara, and Deering, disclose the system of claim 10, but fail to disclose reduction means for reducing the effect of video

data played back by and output from said playback means, wherein said overall state detection means detects the overall bodily state of said audience by reducing the effect of said video data on said image of said audience.

In an analogous art, Lu teaches an audience monitoring system that uses cameras to detect the overall bodily state of an audience, and the effect of video data being output (and other sources of ambient radiation) is reduced so as to provide a clearer image from the cameras (col. 9, lines 1-20).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Hennes, Kimpara, and Deering to include reduction means for reducing the effect of video data played back by and output from said playback means, wherein said overall state detection means detects the overall bodily state of said audience by reducing the effect of said video data on said image of said audience, as taught by Lu, for the benefit of providing a clearer images from the overall state detection means.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes, Kimpara, and Deering as applied to claim 12 above, and further in view of Stevenson (5,255,326, of record).

Regarding claim 13, Hennes, Kimpara, and Deering disclose the system of claim 12, but fail to disclose reduction means for reducing the effect of sound data played back and output by said playback means, wherein overall state

detection means detects the overall state of the audience by reducing the effect of said sound data on the collected sounds emitted by said audience.

In an analogous art, Stevenson discloses a system for controlling devices by monitoring the state of the audience that includes reduction means for reducing the effect of sound data played back and output by playback means, wherein detection means detects audio data from the audience by reducing the effect of said sound data on the collected sounds emitted by said audience (col. 3, lines 48-64).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Hennes, Kimpara, and Deering to include reduction means for reducing the effect of sound data played back and output by playback means, wherein detection means detects audio data from the audience by reducing the effect of said sound data on the collected sounds emitted by said audience, as taught by Stevenson, for the benefit of clearly detecting only those sounds generated by the audience.

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes, Kimpara, and Deering as applied to claim 12 above, and further in view of Alberts, Jr. (4,424,511, of record) [Alberts].

Regarding claims 14 and 15, Hennes, Kimpara, and Deering disclose the system of claim 12, but fail to disclose the overall state detection means detects the overall state of the audience by comparing the collected sounds with a

reference sound level, including means for varying the reference level on the basis of the audience size.

In an analogous art, Alberts discloses a sound level monitoring system wherein the state of the zone being monitored is compared to a reference sound level in order to determine the volume of the sounds being monitored in that zone (col. 2, lines 52-60). This reference level is adjustable to fit the acoustical circumstances regarding the area being monitored (col. 2, lines 61-67). This provides a means to adjust the reference level on the basis of audience size, so that larger venues that hold larger audiences will have a difference reference level set than smaller areas which hold smaller audiences.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system of Hennes, Kimpara, and Deering to include detecting the overall state of the audience by comparing collected sounds with a reference sound level, including means for varying the reference level on the basis of the audience size, as taught by Alberts, a useful indicator for judging audience reaction to content (Alberts, col. 1, lines 22-26).

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hennes, Kimpara, and Deering as applied to claim 12 above, and further in view of King (3,600,516, of record).

Regarding claim 16, Hennes, Kimpara, and Deering disclose the system of claim 12, but fails to disclose a filter which passes a predetermined audio

band, wherein said overall state determination means detects the overall state of the audience based on the sound passed through said filter.

In an analogous art, King teaching using bandpass filters to filter audio signals received from a microphone to limit the bandwidth of the input signal to a specific range in order to discriminate human voice signals within the detected sound (col. 1 line 73 - col. 2 line 29).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Hennes, Kimpara, and Deering to include a filter which passes a predetermined audio band, as taught by King, for the benefit of discriminate human voice signals within the detected sound.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOMINIC D. SALTARELLI whose telephone number is (571)272-7302. The examiner can normally be reached on Monday - Friday 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dominic D Saltarelli/
Examiner, Art Unit 2421